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A bias voltage generating circuit includes a series circuit of a magneto-resistance element and a MOS transistor. The MR ratio of the magneto-resistance element in the series circuit is set to 1/2 the MR ratio of the magneto-resistance element in a memory cell. An adjusting resistor has a resistance value 1/2 the interconnection resistance of a bit line. A bias voltage generating circuit applies a bias voltage to a sense current source. When a constant current flows in the bias voltage generating circuit, the sense current source supplies a sense current equal to the constant current to a bit line.

